SOUTH FORK MERCED RIVER BRIDGE
Yosemite National Park Roads and Bridges
Spanning South Fork Merced River on Wawona Road
Wawona
Mariposa County
California

HAER NO. CA-113

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~~PHOTOGRAPHS~~

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of the Interior
P.O. Box 37127
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Yosemite National Park
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I. INTRODUCTION

Location:	The South Fork Bridge carries the Wawona Road across the South Fork of the Merced River at Wawona in the southern part of Yosemite National Park, Mariposa County, California. QUAD: WAWONA, CA UTM: 11/265125/4157750
Date of Construction:	1931
Designer:	Designed the San Francisco district office, Bureau of Public Roads.
Original and Present Owner:	Yosemite National Park, National Park Service.
Structure Type:	Steel girder and reinforced concrete bridge
Fhwa Structure No.:	BB00-014P
Present Use:	Park highway bridge.
Significance:	Like several other park road bridges built in the 1920s and 1930s, the South Fork Merced River Bridge was a "rustic style" structure characterized by massive log stringers which gave the bridge the appearance of being of log construction. The decorative timber trim has been removed, and the bridge no longer retains its architectural integrity.
Project Information:	Documentation of the South Fork Merced River Bridge is part of the Yosemite National Park Roads and Bridges Recording Project, conducted in summer 1991 by the Historic American Engineering Record. Richard H. Quin, Historian

II. HISTORY

This is one in a series of reports prepared for the Yosemite National Park Roads and Bridges Recording Project. HAER No. CA-117, YOSEMITE NATIONAL PARK ROADS AND BRIDGES, contains an overview history of the park roads. In addition, HAER No. 148, WAWONA ROAD, contains more specific information on the road on which the structure is located.

HISTORY OF THE SOUTH FORK MERCED RIVER BRIDGE

Spanning the South Fork of the Merced River at Wawona in the southern section of Yosemite National Park, the South Fork Bridge is a three-span steel girder deck bridge supported by cement rubble masonry piers and abutments. The structure was originally sided with massive log stringers and fitted with a wooden guard rail, giving it the appearance of a rustic log structure. These wooden features have since been removed; shorn of this distinctive trim, the 1931 bridge has little left to distinguish it from other highway bridges.

The bridge was constructed in the summer and fall of 1931 as part of the reconstruction of the Wawona Road by the Bureau of Public Roads. (The BPR, an agency of the United States Department of Agriculture, had taken responsibility for major park road projects under an agreemsnt with the National Park Service in 1925.) The bridge was designed by the BPR's San Francisco district office in San Francisco. The construction contract was awarded to the George Pollock Company.[1]

The new bridge would replace the venerable Wawona Covered Bridge [HAER No. CA-106] as the main river crossing for the Wawona Road. That bridge, originally constructed as open-span structure by Galen Clark in 1868 and covered a decade later, survives and now provides access to the Pioneer Yosemite History Center. The new road crosses the river a quarter mile downstream from the old wooden bridge.

The 8ureau of Public Roads, in its specifications for the project, estimated that construction of the bridge would require the following materials:

Class "A" concrete	18 cu. yds.
Class "S" concrete	100 cu. yds.*
Sawed timber	26.5 M.B.M.
Structural steel	70,000 lbs.
Reinforcing steel	1250 lbs.
Masonry	535 cu. yds.
Structure excavation (removed)	650 cu. yds.
Asphaltic plank wearing surface	335 sq. yds.
Log rail	344 lin. ft.
Log stringers	272 lin. ft.[2]

The George Pollock Company commenced operations at the bridge site on 9 May 1931. By the end of July, the cement rubble masonry and concrete piers and abutments were complete, and the work force was reduced to thirteen men. In August, the structural steel work was finished, and the asphaltic wooden decking for the roadway was in place. By the end of September, the bridge was complete except for the bituminous asphalt surfacing. The bridge was

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* Classes of concrete refer to the amount of Portland cement used in the mixture, with Class "A" having ths highest proportion and so on. Class "S" is a special mix which was used for the bridge seals.

completed in October at a total cost of $30,962.34.[3] The round timber logs for the stringers and the guard rail were provided by the Government.[4]

The South Fork Merced River Bridge is 139' long and 28' wide, providing for two 14' roadway lanes. (There are no sidewalks or bridle paths; pedestrians and riders generally cross the river on the Wawona Covered Bridge a little further upstream.) The 3-span steel girder deck bridge rests on cement rubble masonry abutments and two cement rubble masonry piers. The bridge is built on a 30° skew. Expansion joints packed with asphaltic filler are located over the piers; the close joints at the abutments are packed with the same filler. Steel girder bearing plates are bolted to the abutments and the tops of the piers; the main girders supporting the bridge deck are in turn bolted to the bearing plates. The plates rest on Class "A" concrete bridge seats atop the piers and abutments. This concrete work is reinforced by a grillage of 1/2" diameter steel rods on 6" centers. The deck was laid with 2" x 8" redwood decking, spliced together with metal nailing cleats. The deck was subsequently covered with asphaltic plank and surfaced. Massive 48" log stringers were once bolted to the sides of the bridge, supporting a 24" high timber guard rail. This timber trim has since been removed, and the sides of the bridge have been encased in plain reinforced concrete at a canted angle downward; the wooden guard rail has been replaced with an aluminum one.[5] Although bridge reports provide no reason for the rail's replacement, it was likely necessary to meet current AASHTO standards.

III. ENDNOTES

1. United States Department of Agriculture, Bureau of Public Roads, "Final Completion Report, S.F. Merced Bridge, Yosemite Project 2-B2," 1 April 1932, 1, 4, 10; Charles Goff Thomson, Superintendent's Monthly Report, October 1931, 8.

2. Idem, "Bridge Over South Fork Merced River, Wawona Reservoir-Four Mile Section, Wawona Road, Yosemite Park Proj, 2B2," construction drawing RG-218-C, September 1930.

3. Thomson, Superintendent's Monthly Report, July 1931, 9; Superintendent's Monthly Report, August 1931, 13; Superintendent's Monthly Report, September 1931, 8; Superintendent's Monthly Report, October 1931, 8.

4. BPR construction drawing RG-218-C.

5. *Ibid.*.

IV. BIBLIOGRAPHY

UNPUBLISHED PUBLIC DOCUMENTS

"Final Completion Report, S.F. Merced Bridge, Yosemite Project 2-B2." San Francisco, CA: United States Department of Agriculture, Bureau of Public Roads, 1 April 1932.

Thomson, Charles Goff. Superintendent's Monthly Report, July 1931.

--Superintendent's Monthly Report, August 1931.

--Superintendent's Monthly Report, September 1931.

--Superintendent's Monthly Report, October 1931.

CONSTRUCTION DRAWINGS

United States Department of Agriculture, Bureau of Public Roads. "Bridge Over South Fork Merced River, Wawona Reservoir-Four Mile Section, Wawona Road, Yosemite Park Project 2B2." Construction drawing RG-218-C, September 1930.